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(54) **APPARATUS FOR TREATING ORGANIC MATERIAL AND NITROGEN OF WASTEWATER BY USING AIR-FLOATATION TYPE BIO-FILTER PACKED WITH FLOATING FILTER MEDIA AND METHOD THEREFOR USING THE SAME IMPROVING NITROGEN REMOVING EFFICIENCY**

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(57) Abstract:

**PURPOSE:** To provide an apparatus for treating organic material and nitrogen of wastewater, which has a physical filtration function and a biological decomposition function, is able to effectively backwash and be used semi-permanently without replacing filter media, and a method for treating the organic material and nitrogen by using the apparatus, which is able to improve nitrogen removing efficiency by coating the floatation filter media with microorganisms including denitrification microorganisms.

**CONSTITUTION:** The apparatus comprises a filter part (20) that is formed by an upper perforated plate (23) and a lower perforated plate (25) and has a predetermined size, a porous floatation filter media (21) which is packed with the filter part, an air supply means (40) which is installed on a lower part of the filter part to supply air to the floatation filter media, a backwash device (50) that is installed in the filter part to backwash sludge attached to the surface of the floatation filter media, and a sludge discharge means (30) that is installed on the lower part of the filter part to collect the sludge separated from the filter part.

